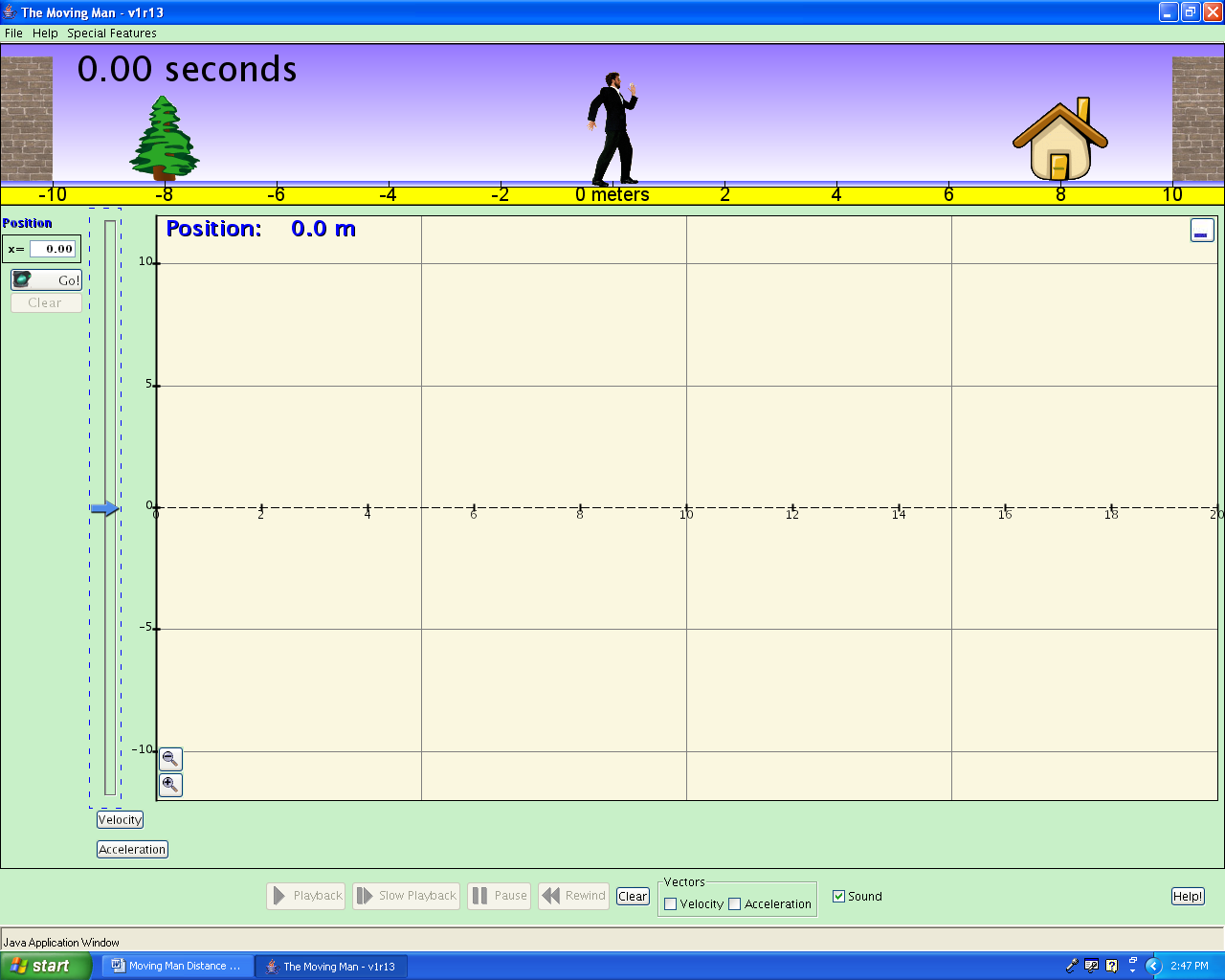
**Procedure –** do the following activity using this web site

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Screen 1

<http://phet.colorado.edu/en/simulation/moving-man>

1. **Getting started.** After “Moving Man” is open leave the position graph open but close all of the other graphs, velocity and acceleration. Your screen should look like screen 1.
2. **Making observations.**  By either clicking on the man or the slider cause the man to move back and forth and observe what shows up on the graph. Using the axes provided below make a sketch of the graph that is produced by each action described next to each axis.

A man standing still at 4m.

-5

-10

5

0

10

Time

(s)

Distance (m)

A man moving from 0m to 10m at a fast pace.

-5

-10

5

0

10

Time

(s)

Distance (m)

A man moving from 0m to 10m at a slow steady pace.

-5

-10

5

0

10

Time

(s)

Distance (m)

Apply what you learned. Look at the graph below and for the different parts of the graph that are marked write a statement about what is happening. Be sure to include the direction of motion and the speed of motion.

A man moving from 0m to -10m at a slow steady pace.

-5

-10

5

0

10

Time

(s)

Distance (m)

A man moving from 0m to 5m at a slow steady pace, then moving back to 0m at a slow steady pace.

-5

-10

5

0

10

Time

(s)

Distance (m)

A man moving from 0m to 10m at a slow steady pace, then moving back to 0m at a fast pace.

-5

-10

5

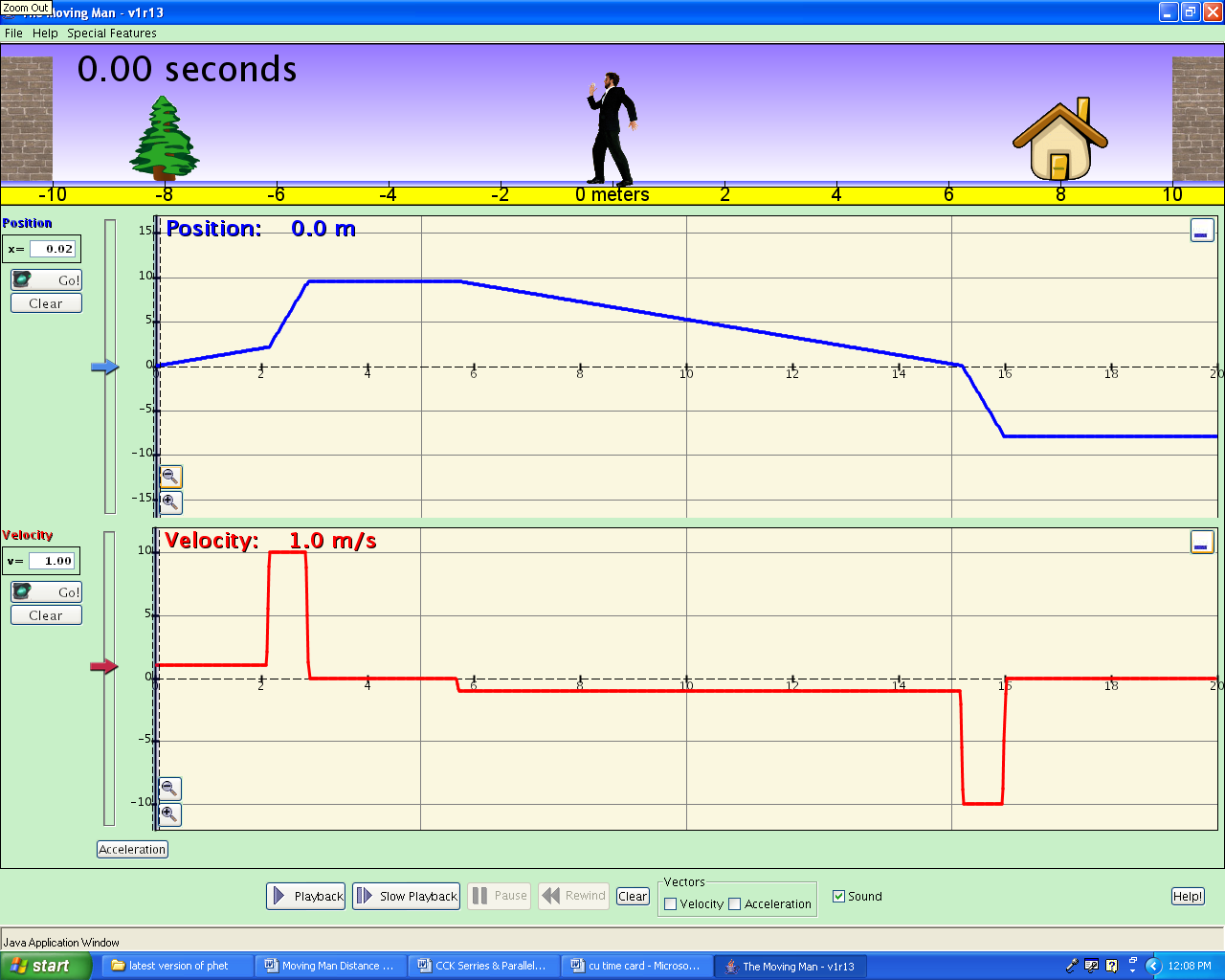
0

10

Time

(s)

Distance (m)



Part A

Part B

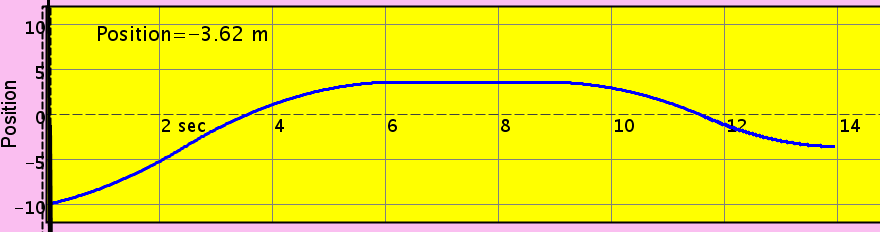
Part C

Part D

Part F

Part E

| Part | Description of direction and speed |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Individually write a possible scenario that would create the following graph. 

Scenario: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now you will not only look at position and time, you will also look at velocity and acceleration, so be sure that you can now also see those graphs.

Before you begin, first let’s define acceleration and velocity:

Acceleration is changes in speed, changes in direction, or changes in both.

Velocity: is a description of both speed and direction of motion.

Create the following scenario on the phet web site, and then sketch each the 3 graphs that appear.

|  |
| --- |
| A man wakes up from his nap under the tree and speeds up toward the house. He stops because he is worried that he dropped his keys. He stands still as he searches his pockets for his keys. Once he finds them, he continues calmly to walk toward the house and then slows to a stop as he nears the door. |
| Position - time graph |
| Velocity - time graph |
| Acceleration - time graph |

Do all 3 graphs look the same? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Was acceleration ever negative? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ describe when it was negative: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now write a motion scenario that you could test. Test it, and then write a description of how you used the program to generate the graphs. Sketch the graphs.

Scenario: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graphs:

|  |
| --- |
| Position - time graph |
| Velocity - time graph |
| Acceleration - time graph |